

REMARKS / DISCUSSION OF ISSUES

Claims 1-13 are pending in the application. Claims 1 and 10 are independent claims.

Unless indicated otherwise, claims are amended for non-statutory reasons, to delete European-style phraseology.

Rejections under 35 U.S.C. § 112, ¶ 2

Claims 1-13 were rejected as being indefinite under this section of the Code. The amendments to the claims are believed to obviate this rejection.

Issues of antecedent basis raised in the Office Action are addressed. Notably, the term ‘an inductive means’ is provided in claim 2 as filed.

Rejections under 35 U.S.C. § 102

Claims 1-13 were rejected under 35 U.S.C. § 102(e) as being anticipated by *Kraus, Jr., et al.* (U.S. Patent 6,470,220). For at least the reasons set forth herein, Applicants respectfully submit that this rejection is improper and should be withdrawn.

Claim 1 is drawn to a method for influencing, in a region of action, magnetic particles that have been introduced into an object. The method features:

- “...b) generating a magnetic field having a pattern in space of its magnetic field strength such that a first sub-zone having a low magnetic field strength and a second sub-zone having a higher magnetic field strength are formed in the region of action,*
- c) changing the position in space of the two sub-zones in the region of action so that the magnetization of the particles changes locally...”*

Claim 10, drawn to an arrangement, includes similar features.

i. The Office Action Fails to Comply with MPEP § 706

At the outset, Applicants respectfully submit that the Office Action has not fulfilled its obligation to clearly articulate a rejection as required by MPEP § 706, which states, *inter alia*:

“The goal of examination is to clearly articulate any rejection early in the prosecution process so that the applicant has the opportunity to provide evidence of patentability and otherwise reply completely at the earliest opportunity. The examiner then reviews all the evidence, including arguments and evidence responsive to any rejection, before issuing the next Office action.”

In its entirety, the substantive portion of the rejection in view of *Kraus, Jr., et al.* states: **Kraus, Jr. discloses an apparatus and method for “influencing” magnetic particles in a target region by generating a magnetic field having a first low magnetic strength region (first sub-zone) and a second high magnetic strength region (second sub-zone) and changing the position in space of the regions to “influence” the magnetic particles.** The examiner is considering the heating of the magnetic particles as “influencing”. Also the **“interfering material” is considered to be the tumor taught in Kraus, Jr. and the “interfering material” would inherently be detected in order to properly position the magnetic particles in the correct location.**

The reference to *Kraus, Jr., et al.* includes over 18 columns of disclosure, yet Applicants are not directed to a single component, feature, specific column or lines of the disclosure of *Kraus, Jr., et al.* Rather, Applicants are left to determine from the applied art what the Examiner considers to be each and every element of claims 1-13. Respectfully, Applicants submit that rejection of claims 1-13 in view of *Kraus, Jr., et al.* at best vaguely articulates a rejection, and deprives Applicants the opportunity to provide evidence of patentability and otherwise reply completely at the earliest opportunity.

Accordingly, because the Office Action has failed to clearly cite the disclosure in the applied art the features of claims 1-13 a proper *prima facie* case of anticipation has not been established. Moreover, even if the Examiner provides evidence in a subsequent Office Action alleging the disclosure in *Kraus, Jr., et al.* of the features of claims 1-13, such Office Action must be made non-final at least because Applicants have not been

afforded the opportunity to provide evidence of patentability in keeping with MPEP § 706.

ii. Claims 1 and 10

Applicants have reviewed the disclosure to *Kraus, Jr., et al.* and have not uncovered the disclosure of the noted features of claims 1 and 10. In the review, Applicants have uncovered the following disclosure:

"The method of applying the external time-varying magnetic field is as follows. A simple schematic of a coil system that can be used to apply the time-varying external magnetic field is shown in FIG. 1. Four pairs of magnetic field coils (more may be used to attain desired field uniformity and control) are arranged on a circle. Each pair consists of coils on opposite sides of the circle and is activated together. The desired field profile is a relatively uniform field that rotates in a circle. This is accomplished by computer control of the coil sets to apply a time varying current to each pair of coils in a sinusoidal fashion (e.g. smoothly varying current profile). FIG. 1 shows a "snapshot" of the device at some moment when one pair of coils are at the peak of the current waveform, another pair of coils are at a minimum, and other pairs of coils are intermediate. The rate at which the current varies to each coil pair is identical, but each coil pair is out of phase from its neighbors by $2\pi/N$ where N is the number of coil pairs.

In the rotating magnetic field described immediately above, the magnetic particles will precess with the rotating external field in an attempt to maintain the lowest possible energy state (e.g. perfectly aligned with the applied field). In a non-inertial and non-viscous medium, the particle would remain perfectly aligned with the external field. In a viscous environment, however, the particle will experience a drag as it rotates and consequently a phase lag behind the applied field. If the drag is sufficient, the phase lag will continue to increase until the lowest energy state (alignment of particle and external field) is in the opposite direction of rotation. At this point the particle will attempt to rotate "backward" (opposite the direction of rotation of the external field) within the constraints of viscous drag and until the external field "catches up" to the particle. Modeling calculations show that indeed, above a certain frequency (determined by precise fluid viscosity, applied field strength, and strength of the magnetic particles) the particles will "jitter" back and forth rather than perform complete rotations with the external field. Although some predictions break down when the particle is no longer sweeping out full rotations, energy is still deposited in the medium. Although particles may not sweep out a full rotation with each cycle of the external magnetic field, the use of higher frequencies may ultimately be more efficient in the net energy deposited. It is clear that an empirical study would be needed to optimize the system parameters, e.g. for a specific set of parameters, magnetic particles "jittering" in an externally applied magnetic field may deposit more energy than particles performing complete

rotations at a lower frequency.” (Kindly refer to column 13, lines 15 through 62 of the reference to *Kraus, Jr., et al.*)

Thus, according to the uncovered teachings of *Kraus, Jr., et al.*, the coils at time-varying peak current waveforms from maximum to minimum, in order to attain a uniform field. By contrast, the method of claim 1 (and similarly the arrangement of claim 10) recited above includes *generating a magnetic field having a pattern in space of its magnetic field strength such that a first sub-zone having a low magnetic field strength and a second sub-zone having a higher magnetic field strength are formed in the region of action, [and] changing the position in space of the two sub-zones in the region of action so that the magnetization of the particles changes locally.*

For at least the reasons set forth above, Applicants respectfully submit, that the noted portion of the applied art fails to disclose at least one feature of each of claims 1 and 10. Therefore, claims 1 and 10 are patentable over the applied art. Claims 2-9 and 11-13, which depend from claims 1 and 10, respectively, are also patentable.

iii. Inherency

As reproduced above, the Examiner alleges that the interfering material, alleged to be a tumor, is inherently be detected. For at least the reasons that follow, Applicants respectfully submit that inherency as to the interfering material has not been established.

M.P.E.P. § 2112 IV provides that:

EXAMINER MUST PROVIDE RATIONALE OR EVIDENCE TENDING TO SHOW INHERENCY

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily

present in the prior art); In re Oelrich, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). “To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.’ ” In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999). (emphasis added).

Furthermore, a claim rejection must be based on objective evidence of record, and cannot be supported merely on subjective belief and unknown authority. See, e.g., M.P.E.P. § 2144.03; *In re Lee*, 277 F.3d at 1344-45, 61 USPQ2d at 1434-35 (Fed. Cir. 2002); *In re Zerko*, 258 F.3d at 1386, 59 USPQ2d at 1697.

No such concrete evidence has been provided by the Examiner here, nor did the Examiner submit an affidavit as required by 37 C.F.R. § 1.104(d) (2) if this proposed motive were based on facts within his personal knowledge (see M.P.E.P. § 2144.03). Applicants respectfully request that such an affidavit be provided if a rejection continues to be made without a citation of any objective evidence.

Double Patenting Rejection

Applicants have considered the rejection under the judicially created doctrine of obviousness-type double patenting, and will provide a terminal disclaimer if necessary and proper when all other rejections are moot.

Conclusion

In view the foregoing, applicant(s) respectfully request(s) that the Examiner withdraw the objection(s) and/or rejection(s) of record, allow all the pending claims, and find the application in condition for allowance.

If necessary, the Commissioner is hereby authorized in this, concurrent, and further replies to charge payment or credit any overpayment to Deposit Account Number 50-0238 for any additional fees, including, but not limited to, the fees under 37 C.F.R. §1.16 or under 37 C.F.R. §1.17.

If any points remain in issue that may best be resolved through a personal or telephonic interview, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Respectfully submitted on behalf of:

Phillips Electronics North America Corp.



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